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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,441	03/03/2000	Jason C. Fan	M-8564US	7539

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EXAMINER	
GEORGE, KEITH M	

ART UNIT	PAPER NUMBER
2663	13

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/519,441	FAN ET AL.	
	Examiner	Art Unit	
	Keith M. George	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,8-12,16,18,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,8-12,16,18,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 6 and 18 recites the limitation "said quality of said link" in lines 1-2 of each of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 9-11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al., U.S. Patent 5,311,585, hereinafter Armstrong, in view of George et al., U.S. Patent 4,644,532, hereinafter George.

6. Referring to claims 1 and 3, Armstrong teaches a stored program control switch shown in figure 5. The switch includes a digital signaling interface (514); which is a transceiver for communicating signaling messages in digital form over a link (520). The switch also includes a

switch fabric that performs, under the control of a processor, all the switching necessary to connect trunks to each other (column 11, lines 39-60). Armstrong teaches the hardware configuration described above with the possible exception of a method to monitor neighboring nodes for a topology change and communicate that change to the other nodes in the network. George teaches a topology update procedure that is performed as follows: when a control node receives a message indicating a change in topology and including a time stamp (session identifier) from a neighboring node (monitor a message from a neighboring node identifying attributes of the neighboring node), the control node updates the topology by replacing the list of links adjacent to the node in its topology data base with the new list. After the control node has updated its own database, it proceeds to inform all other control nodes about the new status via a broadcast protocol by sending a broadcast message with the information to each neighbor on the network (communicate to other nodes a change in the topology). Whenever a node on the network receives such a broadcast, it checks its topology entry for the node. If the time stamp in the messages is less than or equal to the current time stamp stored for the node, the broadcast message is discarded. Otherwise the receiving control node changes its topology table entry and proceeds to transmit the identical message to all of its neighbors (each session identifier (time stamp) being associated with a different topology) (column 3, line 65 - column 4, line 37). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art that George was teaching a topology update procedure that could be used in any type of communication network that typically consists of a plurality of nodes and communication links interconnecting the nodes. The nodes taught by George are generic in nature and one of ordinary skill in the art would be motivated to utilize the hardware described by Armstrong as a node in

the network of George. One of ordinary skill in the art would have been motivated to do this because both George and Armstrong are teaching a method to be used in a communication network with the purpose of transmitting data between two points of a network.

7. Referring to claims 9 and 11, Armstrong and George teach the switch described in claim 1 above where it was clearly shown that George teaches that whenever a control node receives a message, the control node updates the topology by replacing the list of links adjacent to the node it its topology database with the new list (update a routing table within the routing switch based upon the topology change) (column 4, lines 9-13).

8. Referring to claims 10 and 21, Armstrong and George teach the switch described in claims 1 and 3 above and George also teaches that additions or deletions of communication links are made know to the local topology monitor (column 6, lines 42-44).

9. Claims 4, 8, 16, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong and George as applied to claims 1 and 3 above, and further in view of Pitchaikani et al., U.S. Patent 6,061,505, hereinafter Pitchaikani. Armstrong and George teach the switch described in claims 1 and 3 above with the possible exception of detecting the address of the neighboring nodes. Pitchaikani teaches a method for providing topology information about a network and that each device on a network is uniquely represented by data stored in a corresponding device record. Each device record includes data for the field illustrated in Table 1. Table 1 clearly shows that the logical address and physical address of the device are recorded (column 6, lines 48-54 and Table 1). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to monitor the address of the neighboring devices as taught by Pitchaikani in the router of Armstrong and George that was monitoring topology

changes. One of ordinary skill in the art would have been motivated to do this because as networks becoming increasingly complex, it become increasing important to keep track of the various devices on a network and now they are interconnected. Such interconnection information is referred to as the topology of the network (Pitchaikani, column 1, lines 17-21).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong and George as applied to claim 1 above, and further in view of Liang et al., U.S. Patent 5,732,086, hereinafter Liang. Armstrong and George teach the switch described in claim 1 above with the possible exception of updating the topology after a threshold period of time. Liang teaches a method for determining the topology of a reconfigurable multi-nodal network, which includes a state machine shown in figure 4. The stable state indicates that the node considers the topology stable since it has not received a topology update from any node within a time duration (column 8, lines 16-18). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the state machine of Liang in the system of Armstrong and George. One of ordinary skill in the art would have been motivated to do this because Liang is teaching a method to discover when no neighbor nodes are heard from then the system becomes stable, otherwise it should continue to update in one of the other states (column 8, lines 3-22).

Response to Arguments

11. Applicant's arguments filed 8 March 2004 have been fully considered but they are not persuasive.

12. On pages 7-8 of the Amendment applicant argues that George does not teach or suggest that each node in the network associates the same sequence number or time stamp with a

particular topology. In response, independent claims 1 and 3 do not contain a limitation requiring a time stamp to be associated with a *particular* topology. Claims 1 and 3 simply state that a session identifier (time stamp) is associated with a different topology of the network and that the routing switches associate the same session identifier (time stamp) with the changed topology. It should also be noted that the cited portion of the originally filed specification does not support such a limitation requiring the time stamp to be associated with a *particular* topology.

13. Applicant also argues that George does not teach that the same sequence number or time stamp is also sent by the receiving node when it transmits the topology data to the adjacent domains. In response, George clearly teaches that the receiving control node changes its topology and proceeds to transmit the *identical* message to all of its virtual neighbors (column 4, lines 25-27). Since George teaches that the identical message received is then sent to all of its neighbors it is clearly understood that the same time stamp (session identifier) is sent to all of the neighbors and therefore the neighbors (routing switches) associate the same time stamp with the changed topology.

14. Applicant does not provide any additional arguments for claims 4, 8-12, 16, 20 and 21, therefore the rejections stated in the previous office action are maintained.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith M. George whose telephone number is 703-305-6531. The examiner can normally be reached on M-Th 7:00-4:30, alternate F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith M. George
20 May 2004

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

5/27/04